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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/712,817

11/12/2003

Takeshi Yokoyama

KOY-0019

8828

7590

12/27/2005

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Bloomfield, CT 06002

EXAMINER

LIANG, LEONARD S

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,817

Applicant(s)

YOKOYAMA, TAKESHI

Examiner

Leonard S. Liang

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. Specifically, the applicant is required to match all references in the drawings to the references in the specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wen et al (US Pat 6164757) in view of Ramler (US Pat 3984726).

Wen et al discloses:

- {claim 1} An ink jet printer (figure 2); a recording head for jetting ink to be cured by being irradiated with an ultraviolet ray from a nozzle to a recording medium

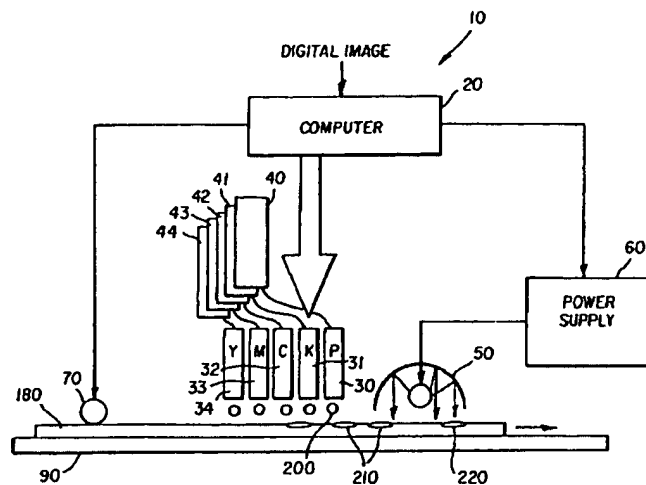


FIG. 2

- {claims 3 and 15} wherein the ultraviolet ray irradiating device further comprises a reflecting member for reflecting the ultraviolet rays radiated from the ultraviolet ray sources
- {claims 6 and 18} wherein each ultraviolet ray source is a high pressure mercury lamp, a metal halide lamp, a hot cathode tube or a cold cathode tube (column 5, lines 14-15)
- {claims 7 and 11} wherein the ink has a cationic curing property (column 5, lines 40-47)
- {claims 8 and 12} wherein a recording type applied to the ink jet printer is a serial type or a line type (figure 2, reference 30-34; abstract)
- {claim 9} An ink jet printer (figure 2); a recording head for jetting ink to be cured by being irradiated with an ultraviolet ray from a nozzle to a recording medium (figure 2, reference 30-34, 50)

Art Unit: 2853

- {claim 13} An ultraviolet ray irradiating device which is arranged in an ink jet printer for jetting ink to be cured by being irradiated with an ultraviolet ray from a nozzle to a recording medium (figure 2, reference 30-34, 50)
- {claim 19} An ultraviolet ray irradiating device which is arranged in an ink jet printer for jetting ink to be cured by being irradiated with an ultraviolet ray from a nozzle to a recording medium (figure 2, reference 30-34, 50)

Wen et al differs from the claimed invention in that it does not disclose:

- {claim 1} an ultraviolet ray irradiating device having a plurality of ultraviolet ray sources, the ultraviolet ray sources irradiating the ink jetted on the recording medium by the recording head with a plurality of ultraviolet rays, wherein each of the ultraviolet ray sources radially radiates the ultraviolet ray from a center thereof in a radiation direction, and wherein at least two ultraviolet ray sources adjacent to one another are arranged so as to set distances from the two ultraviolet ray sources to a recording surface of the recording medium to be different from each other
- {claims 2, 10, 14, and 20} wherein at least three ultraviolet ray sources among the ultraviolet ray sources are arranged in line so as to have a convexity in a direction going away from the recording surface
- {claims 4 and 16} wherein the reflecting member is a reflecting plate made of aluminum or a glass-formed plate having a surface on which a thin film of a metallic compound including aluminum is deposited

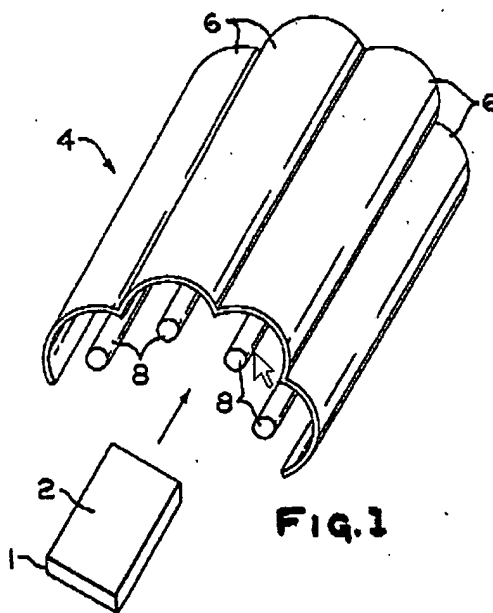
- {claims 5 and 17} wherein at least three ultraviolet ray sources among the ultraviolet ray sources are arranged in line so as to have a convexity in a direction going away from the recording surface approach, and the reflecting member is shaped to be formed along the ultraviolet sources
- {claim 9} an ultraviolet ray irradiating device having a plurality of ultraviolet ray sources, the ultraviolet ray sources irradiating the ink jetted on the recording medium by the recording head with a plurality of ultraviolet rays, wherein each of the ultraviolet ray sources is a light emitting diode, and wherein at least two ultraviolet ray sources adjacent to each other among the ultraviolet ray sources arranged adjacent to one another are arranged so as to set distances from the two ultraviolet ray sources to a recording surface of the recording medium to be different from each other
- {claim 13} a plurality of ultraviolet ray sources for irradiating the ink jetted on the recording medium with a plurality of ultraviolet rays, wherein each of the ultraviolet ray sources radially radiates the ultraviolet ray from a center thereof in a radiation direction, and wherein at least two ultraviolet ray sources adjacent to each other among the ultraviolet ray sources arranged adjacent to one another are arranged so as to set distances from the two ultraviolet ray sources to a recording surface of the recording medium to be different from each other
- {claim 19} a plurality of ultraviolet ray sources for irradiating the ink jetted on the recording medium with a plurality of ultraviolet rays, wherein each of the ultraviolet ray sources is a light emitting diode, and wherein at least two

Art Unit: 2853

ultraviolet ray sources adjacent to each other among the ultraviolet ray sources arranged adjacent to one another are arranged so as to set distances from the two ultraviolet ray sources to a recording surface of the recording medium to be different from each other

Ramler discloses:

- {claim 1} an ultraviolet ray irradiating device having a plurality of ultraviolet ray sources, the ultraviolet ray sources irradiating the ink jetted on the recording medium by the recording head with a plurality of ultraviolet rays, wherein each of the ultraviolet ray sources radially radiates the ultraviolet ray from a center thereof in a radiation direction, and wherein at least two ultraviolet ray sources adjacent to one another are arranged so as to set distances from the two ultraviolet ray sources to a recording surface of the recording medium to be different from each other (figure 1, reference 8)



Art Unit: 2853

- {claims 2, 10, 14, and 20} wherein at least three ultraviolet ray sources among the ultraviolet ray sources are arranged in line so as to have a convexity in a direction going away from the recording surface (figure 1, reference 8)
- {claims 4 and 16} wherein the reflecting member is a reflecting plate made of aluminum or a glass-formed plate having a surface on which a thin film of a metallic compound including aluminum is deposited (column 2, lines 50-63)
- {claims 5 and 17} wherein at least three ultraviolet ray sources among the ultraviolet ray sources are arranged in line so as to have a convexity in a direction going away from the recording surface approach, and the reflecting member is shaped to be formed along the ultraviolet sources (figure 1, reference 8)
- {claim 9} an ultraviolet ray irradiating device having a plurality of ultraviolet ray sources, the ultraviolet ray sources irradiating the ink jetted on the recording medium by the recording head with a plurality of ultraviolet rays, wherein each of the ultraviolet ray sources is a light emitting diode, and wherein at least two ultraviolet ray sources adjacent to each other among the ultraviolet ray sources arranged adjacent to one another are arranged so as to set distances from the two ultraviolet ray sources to a recording surface of the recording medium to be different from each other (figure 1, reference 8; column 13, lines 1-7)
- {claim 13} a plurality of ultraviolet ray sources for irradiating the ink jetted on the recording medium with a plurality of ultraviolet rays, wherein each of the ultraviolet ray sources radially radiates the ultraviolet ray from a center thereof in a radiation direction, and wherein at least two ultraviolet ray sources adjacent to

Art Unit: 2853

each other among the ultraviolet ray sources arranged adjacent to one another are arranged so as to set distances from the two ultraviolet ray sources to a recording surface of the recording medium to be different from each other (figure 1, reference 8)

- {claim 19} a plurality of ultraviolet ray sources for irradiating the ink jetted on the recording medium with a plurality of ultraviolet rays, wherein each of the ultraviolet ray sources is a light emitting diode, and wherein at least two ultraviolet ray sources adjacent to each other among the ultraviolet ray sources arranged adjacent to one another are arranged so as to set distances from the two ultraviolet ray sources to a recording surface of the recording medium to be different from each other (figure 1, reference 8; column 13, lines 1-7)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Ramler into the invention of Wen et al. The motivation for the skilled artisan in doing so is to gain the benefit of providing an means of providing a constant irradiating intensity, even if one of the ultraviolet ray sources should begin to decrease in intensity.

Response to Arguments

Applicant's arguments filed 10/14/05 have been fully considered but they are not persuasive.

First, the examiner would like to note that the applicant has not responded to the examiner's previous jumbo specification objection. The examiner requests that the applicant

Art Unit: 2853

matches the reference numbers in the drawings with the reference numbers in the specification.

The examiner also requests that the applicant let the examiner know when this has been done.

In regards to arguments, the applicant argues "not to argue unclaimed limitations, but for the Examiner's information it is also respectfully noted herein that Wen also fails to address the structurally inherent issue of downsizing an apparatus or miniaturizing the device..." However, in this argument, the applicant is doing exactly what he or she claims is not being done, that is, arguing unclaimed limitations. The examiner reminds the applicant that it is the claimed invention that is examined. There is no disclosure whatsoever of this issue of downsizing in the claimed invention. Furthermore, absent specific claim language, the examiner does not believe this issue necessarily disqualifies the combination of multiple light sources into an art that discloses a single light source.

The applicant further argues, "However, nothing about an ink jet recording head or apparatus as presently claimed is described in Ramler." The examiner responds by noting that it is not necessary for Ramler to disclose an ink jet recording head per say. The common field of invention here is curing a coating by UV light, not mode of printing said coating. Ramler discloses using UV light to cure a coating and Wen discloses using UV light to cure a coating (of ink). Ramler is simply being used to teach an aspect of the UV irradiating device.

The applicant further argues, "In contrast, as for the present invention, it is possible to efficiently irradiate and cure ink on a medium even when an irradiating unit is downsized by arranging light sources so that distances from the light sources to a recording surface are different from each other." Again, this concept of downsizing is not mentioned in the claimed invention and is thus not pertinent for discussion here.

Art Unit: 2853

In conclusion, it seems that the applicant is trying to improperly narrow the scope of the claimed invention by introducing new concepts such as downsizing, which are not currently part of the claimed invention. The examiner maintains that the previous rejection reads on the invention as presently claimed.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

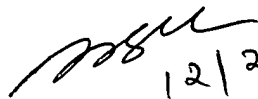
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S. Liang whose telephone number is (571) 272-2148. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2853

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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12/21/05
MANISH S. SHAH
PRIMARY EXAMINER